SCHEMATIC DESIGN MANUAL

NEW MIDDLE SCHOOL

Minot, Ward County, North Dakota

For
Minot Public Schools
Minot, Ward County, North Dakota

Healy | Bender Project No. 10-3111-159

January 10, 2012

HEALY, BENDER & ASSOCIATES, INC.
4040 Helene Avenue, Naperville, Illinois 60564 Telephone 630.904.4300 Facsimile 630.904.1515 www.healybender.com

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Minot, Ward County, North Dakota

HEALY BENDER

HEALY, BENDER & ASSOCIATES, INC.
4040 Helene Avenue, Naperville, Illinois 60564 Telephone 630.904.4300 Facsimile 630.904.1515 www.healybender.com

PROJECT DESCRIPTION

INTRODUCTION

This document represents the Schematic Design Phase of the design process for Minot Public Schools; Master Plan Option 2, Phase 1 approved by the Minot Public Schools to address the damaged and destroyed facilities from the recent floods.

NEW MIDDLE SCHOOL

In response to the need to replace Ramstad Middle School, a new middle school facility is proposed providing 2 sections per grade level for 6th, 7th, and 8th grade level students. Each section with classrooms for Reading, Language Arts, Social Studies, and Math, plus Teacher Planning and Small Group Instruction, Team Resource, and Science Labs with adjacent Prep Rooms; Art Room with storage and kiln, Family and Consumer Sciences, Technology Labs (2), Band Room, Choral Room, Practice Rooms (2), Special Ed (2) with Resource and offices; Administration Offices with a secured access main entrance, including offices for Principal, Assistant Principal, Counselor, etc.; Media Center with Computer Lab/Resource Center and support areas; Cafeteria/Stage with Kitchen; Gymnasium and locker rooms with 2 section capability, Weights/Fitness Room, and Pool; Multi-User Toilet Rooms, Custodial and miscellaneous accessory spaces. The base area square footage for direct replacement is the first and second floors; the second floor mechanical rooms and the entire third floor level is proposed as a design add alternate. Acoustical considerations within the Gymnasium, Pool, Cafeteria and Stage, Band Room, and Choral will need to be addressed during Design Development; we recommend an acoustic consultant be retained for this task. Preliminary considerations relative to the City of Minot 30 NLR Zone are indicated within, however further refined requirements will need to be addressed during Design Development; therefore we recommend an acoustic consultant be retained for this task as well.

Site improvements include softball fields (2) with football/soccer practice field overlapping outfields, 400 meter track around the football/soccer field, paved parking (and student drop off/pick up drive) to facilitate staff and visitor's needs.

The schematic design process to date has been inclusive, with input gathered from the Minot Public Schools design team including select staff and administration, with constructability and budgetary input from Kraus-Anderson Construction Co., civil engineering from Kadrmas, Lee & Jackson, MEP systems from Prairie Engineering, and technology systems from Elert & Associates.

The schematic design building plans and site plan included in this document represent the preferred resolution of architectural challenges, project budget, functional requirements and planning considerations.

The report also includes engineering reports from the civil engineer, building structural, mechanical, and electrical engineers, and technology consultant.

TAB – 2 Building Space Program

NEW MIDDLE SCHOOL

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Minot Public Schools

New Ramstad Middle School
Schematic Design

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Square Footage / Area Summary

Space Summary	New Middle School #	New Middle School SF	New Middle School Total SF	Jim Hill Middle School #	Jim Hill Middle School SF	Jim Hill Middle School Total SF	Ramstad Middle School #	Ramstad Middle School SF	Ramstad Middle School Total SF	Remarks
Academic										
Reading	4	826	3,304	5	867	4,335	6	793	4,758	
Reading (Add Alternate)	2	826	1,652							
Language Arts	4	826	3,304	5	867	4,335	6	793	4,758	
Language Arts (Add Alternate)	2	826	1,652							
Social Studies	4	826	3,304	6	867	5,202	5	793	3,965	
Social Studies (Add Alternate)	2	826	1,652							
Math	4	826	3,304	6	867	5,202	5	793	3,965	
Math (Add Alternate)	2	826	1,652							
Science	4	1,292	5,168	4	1,010	4,040	4	790	3,160	
Science (Add Alternate)	2	1,292	2,584							
Science Prep/Storage	4	100	400	4	148	592	4	178	712	
Science Prep/Storage (Add Alt.)	2	100	200							
Small Group Instruction	4	172	688							
Small Group Instruction (Add Alt.)	2	185	370							
Laptop Storage										
Team Resource	4	586	2,344	1	1,259	1,259				
Team Resource (Add Alternate)	2	586	1,172							
Student Locker Bay	4	552	2,208							
Student Locker Bay (Add Alt.)	2	598	1,196							
Teacher Planning	4	257	1,028							
Teacher Planning (Add Alternate)	2	265	530							
Staff Toilet Rooms	4	50	200							
Staff Toilet Rooms (Add Alternate)	2	52	104							
Add Alternate Area			**12,764**							
Base Building Area			**25,252**			**24,965**			**21,318**	
Media Center										
Stacks and Seating	1	2,570	2,570	1	1,963	1,963	1	1,967	1,967	
Office	1	116	116	1	270	270	1	159	159	
Workroom	1	379	379				1	215	215	
Computer Lab	1	590	590	1	1,117	1,117	1	1,298	1,298	Distributed Technology
Studio	1	271	271							
Tech. / MDF	1	107	107							
Storage	1	107	107							
			4,140			**3,350**			**3,639**	
Shared Labs										
Technology Lab (Computers)	1	920	920	1	1,891	1,891	1	1,053	1,053	
Technology Room				1	545	545				
Tech. Office	1	107	107	2	266	532	2	130	260	
Tech. Storage	1	234	234	2	100	200	1	196	196	
Wood Shop	1	985	985				1	926	926	
Wood Shop Storage							1	110	110	
Business Education										
World Language										
Family & Consumer Science	1	1,743	1,743	2	1,128	2,256	2	1,352	2,704	
F&CS Office	1	96	96	1	96	96	1	45	45	
F&CS Storage	2	137	274				1	45	45	
Wash / Dry	1	101	101							
Art Lab	1	1,317	1,317	1	1,111	1,111	1	1,298	1,298	
Kiln / Storage	1	173	173							
Storage				1	115	115	1	115	115	
			5,950			**6,746**			**6,752**	

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Music										
Band	1	2,072	2,072	1	2,103	2,103	1	1,869	1,869	
Instrument Storage	1	247	247	3	132	396	2	126	252	
Stage	1	1,108	1,108							
Music Office / Library	1	130	130	2	268	536	1	108	108	
Practice Room	2	75	150	3	84	252	3	85	255	
Choral	1	1,398	1,398	1	1,170	1,170	1	1,068	1,068	
Uniform Storage	1	190	190							
			5,295			**4,457**			**3,552**	
Special Education										
LD Resource										
EBD										
S. E. Room							3	209	627	
Classrooms	2	639	1,278	2	941	1,882	2	972	1,944	
Toilet Room	1	161	161							
Title 1				1	564	564				
Reading				1	1,202	1,202				
Office	1	177	177							
Small Group										
Conference										
SE Reception							2	113	226	
			1,616			**3,648**			**2,797**	
Physical Education										
Gymnasium	1	11,068	11,068	1	6,662	6,662	2	8,803	17,606	
Stage				1	1,672	1,672	1	1,616	1,616	
P.E. Storage	1	266	266	2	151	302	2	369	738	
Health Classroom										
Girls Locker Room	1	1,212	1,212	1	2,061	2,061	1	1,838	1,838	
Boy's Locker Room	1	1,212	1,212	1	1,940	1,940	1	2,016	2,016	
P. E. Office	2	147	294	2	116	232	2	134	268	
Pool	1	4,462	4,462	1	3,713	3,713	1	3,420	3,420	
Pool Mechanical	1	259	259							
Pool Storage	1	259	259							
Weights / Fitness	1	1,648	1,648				1	775	775	
			20,680			**16,582**			**28,277**	
Administration										
Reception	1	452	452	1	473	473	1	560	560	
Principal Office	1	241	241	1	195	195	1	190	190	
Assistant Principal Office	1	159	159	1	170	170	1	188	188	
Attendance				1	142	142				
Conference Room	1	222	222							
Staff Toilet Room	2	58	116	2	70	140	2	68	136	
Faculty Workroom	1	314	314	1	120	120				
			1,504			**1,240**			**1,074**	

Minot Public Schools

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Student Services Offices										
Reception Area	1	165	165							
Counselor's Office	2	160	320	2	145	290	1	181	181	
Social Worker / Health Office							1	192	192	
Health - Nurse's Office							1	129	129	
Conference Room	1	222	222							
Tech. Office	1	159	159							
Time Out	1	83	83							
Files and Records	1	124	124	1	83	83	1	72	72	
			1,073			**373**			**574**	
Cafeteria / Food Service										
Cafeteria (240)	1	2,740	2,740	1	2,930	2,930	1	2,059	2,059	
Control	1	124	200							
Storage	2	529	200				1	162	162	
Kitchen	1	1,628	1,628	1	1,539	1,539	1	1,173	1,173	
Toilet	1	63	63							
Serving	1	400	400							
Faculty Lounge			0	1	380	380	1	808	808	
Concessions	1	112	112				1	238	238	
			5,343			**4,849**			**4,440**	
Building Services										
Restrooms	6	260	1,560	6	225	1,350	8	142	1,136	
Restrooms	2	244	488							
Air Handling Equipment	2	2,453	4,906							
Boiler Room	1	1,364	1,364							
Receiving / Trash	1	438	438							
Storage				2	200	400	3	620	1,860	
Maintenance Office / Workshop	1	91	91	1	231	231			0	
Custodial Closets	3	79	237	3	55	165	5	65	325	
Custodial Closets (Add Alternate)	1	69	69							
Communication Closets	3	79	237							
Communication Closets (Add Alt.)	1	69	69							
Elevator	1	50	50							
Elevator Mechanical	1	107	107							
Lower Level				1	10,752	10,752				
Add Alternate Area			**5,532**							
Base Building Area			**4,084**			**12,898**			**3,321**	
Total Net Base Area (NSF)			**74,937**			**80,587**			**75,744**	
Total Net Add Alt. Area (NSF)			**18,296**							
Matrix Base			**28,745**			**27,370**			**25,311**	
Matrix Add Alt.			**6,712**							
Total Gross Add Alt. Area (GSF)			**25,008**							Incl. Gym Addition
Total Gross Base Area (GSF)			**103,682**			**107,957**			**101,055**	
Adjusted Total Gross Area (GSF)			**128,690**							

TAB – 3 Code Compliance

NEW MIDDLE SCHOOL

Minot, Ward County, North Dakota

HEALY BENDER

H E A L Y , B E N D E R & A S S O C I A T E S , I N C .
4040 Helene Avenue, Naperville, Illinois 60564 Telephone 630.904.4300 Facsimile 630.904.1515 www.healybender.com

CODE COMPLIANCE

The proposed additions and renovations will be reviewed for compliance with the current building codes adopted by the State of North Dakota which are:

1. 2009 International Building Code*
2. 2009 International Mechanical Code*
3. 2009 International Fuel Gas Code*
4. 2009 Uniform Plumbing Code*
   *Including North Dakota State Building Code Amendments
5. Wiring Standards of North Dakota
6. 2009 International Energy Conservation Code
7. Americans with Disabilities Act Accessibility Guidelines (ADAAG)

The new building is classified as Educational Group E occupancy. The construction type shall be IIB. The allowable building height for an educational occupancy of type IIB construction is two stories and 55'-0". With an automatic fire sprinkler system the building can be enlarged to a maximum of three stories and 75'-0". The allowable building area for an educational occupancy of type IIB construction is 14,500 square feet per floor. With an automatic fire sprinkler system the building can be enlarged an additional 43,500 square feet per floor for a two story building and 29,000 square feet per floor for a three story building. Where a building has more than 100 percent of its perimeter on a public way or open space having a minimum width of 30 feet, the building can be enlarged an additional 10,875 square feet per floor. With both increases, the allowable building area per floor is 68,875 square feet for a two story building and 54,375 square feet for a three story building.

The total floor area of each floor is as follows:

Base Bid		Add Alternate (including base bid)	
• First Floor	= 79,004 square feet	First Floor	= 79,004 square feet
Second Floor	= 24,678 square feet	Second Floor	= 29,842 square feet
		Third Floor	= 19,844 square feet

Since the first floor of the building is larger than the allowable floor area, it shall be divided into two separate buildings/fire areas separated by a 2 hour fire wall in the base bid and three separate buildings/fire areas separated by a 2 hour fire wall in the add alternate. The fire wall in the base bid shall be located along the north/south wall separating the gymnasium and boy's locker room from the kitchen, gym storage, boy's toilet room, and weights/fitness. In the add alternate the fire walls shall be as indicated above as well as a fire wall along the walls separating the band room, adjacent corridors, and art room from the stage and cafeteria.

The floor area of each building/fire area is as follows:

Base Bid			Add Alternate	
• FA-1 –	First Floor	= 22,568 square feet	FA-1 – First Floor	= 22,568 square feet
FA-2 –	First Floor	= 56,436 square feet	FA-2 – First Floor	= 49,128 square feet
	Second Floor	= 24,344 square feet	FA-2 – Second Floor	= 29,842 square feet
			FA-2 – Third Floor	= 19,844 square feet
			FA-3 – First Floor	= 7,308 square feet

The allowable occupant loads of each fire area are as follows:

Base Bid			Add Alternate	
• FA-1 –	First Floor	= 2,380 persons	FA-1 – First Floor	= 2,380 persons
FA-2 –	First Floor	= 3,740 persons	FA-2 – First Floor	= 2,890 persons
	Second Floor	= 770 persons	FA-2 – Second Floor	= 770 persons
			FA-2 – Third Floor	= 610 persons
			FA-3 – First Floor	= 1,020 persons

The calculated occupant loads of each fire area are as follows:

Base Bid			Add Alternate	
• FA-1 –	First Floor	= 1,957 persons	FA-1 – First Floor	= 1,957 persons
FA-2 –	First Floor	= 1,368 persons	FA-2 – First Floor	= 1,117 persons
	Second Floor	= 587 persons	FA-2 – Second Floor	= 605 persons
			FA-2 – Third Floor	= 512 persons
			FA-3 – First Floor	= 251 persons

The new building shall be fully equipped with an automatic fire sprinkler system and fire alarm system.

The fire resistance rating requirements for building elements is as follows:

- Primary Structural Frame - 0 hours

- Bearing Walls - Exterior - 0 hours

  Interior - 0 hours

- Non Bearing Walls and Partitions Based on Fire Separation Distance:

	X < 5’-0”	= 1 hour
5’-0” ≤	X < 10’-0”	= 1 hour
10’-0” ≤	X < 30’-0”	= 0 hour
	X ≥ 30’-0”	= 0 hour

Glazing in fire rated doors, adjacent sidelights and transoms shall be fire rated glass meeting the rating requirements of the opening.

The first floor stairwell adjacent to the administration area shall be separated from the corridor by a horizontal accordion fire door (Won Door) meeting 1 hour fire rating requirements.

The opening between the boy's P. E. office shall be a 1 ½ hour fire rated assembly with fire rated glass.

The door opening between the media center and the adjacent south stairwell shall be a 1 hour fire rated door with full glass opening, frame, and hardware with fire rated glass.

The minimum thermal resistance (R-value) of the roofing system at the new building shall meet an R-25 with continuous insulation. The minimum total thermal resistance of the new exterior walls shall meet R15.2.

The slab on grade shall have a minimum thermal resistance of R-15. This can be achieved with a layer of rigid insulation on the interior side of the perimeter foundation wall. The insulation shall extend downward from the top of the slab for a minimum distance of 24 inches or to the top of the footing.

The fenestration in the new building shall meet energy code requirements as follows:

- Curtain wall / store front – U-factor = .040
- Entrance doors – U-factor = 0.80
- All other - U-factor = 0.45

The Solar Heat Gain Coefficient (SHGC) for all frame types shall meet energy code requirements as follows:

- SHGC: Projection factor(PF) < 0.25 = 0.45
- SHGC: 0.25 ≤ PF ≥ 0.5 = No Requirement
- SHGC: PF ≥ 0.5 = No Requirement

Skylights shall have a minimum U-factor of 0.60.

TAB – 4 LEED

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LEED for Schools 2007
Registered Project Checklist

Project Name: New Ramstad Middle School

Project Address: 36th Avenue NW, Minot, ND 58701

Yes	?	No		
32	31	16	**Project Totals** (Pre-Certification Estimates)	79 Points
CERTIFIED			**Certified**: 29-36 points **Silver**: 37-43 points **Gold**: 44-57 points **Platinum**: 58-79 points	

Yes	?	No			
9	4	3	**Sustainable Sites**		16 Points
Yes			Prereq 1	**Construction Activity Pollution Prevention**	Required
Yes			Prereq 2	**Environmental Site Assessment**	Required
	1		Credit 1	**Site Selection**	1
		1	Credit 2	**Development Density & Community Connectivity**	1
		1	Credit 3	**Brownfield Redevelopment**	1
	1		Credit 4.1	**Alternative Transportation**, Public Transportation	1
1			Credit 4.2	**Alternative Transportation**, Bicycle Use	1
1			Credit 4.3	**Alternative Transportation**, Low-Emitting & Fuel Efficient Vehicles	1
1			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
		1	Credit 5.1	**Site Development**, Protect or Restore Habitat	1
	1		Credit 5.2	**Site Development**, Maximize Open Space	1
1			Credit 6.1	**Stormwater Design**, Quantity Control	1
1			Credit 6.2	**Stormwater Design**, Quality Control	1
1			Credit 7.1	**Heat Island Effect**, Non-Roof	1
	1		Credit 7.2	**Heat Island Effect**, Roof	1
1			Credit 8	**Light Pollution Reduction**	1
1			Credit 9	**Site Master Plan**	1
1			Credit 10	**Joint Use of Facilities**	1

LEED for Schools 2007
Registered Project Checklist

Yes	?	No			
2	4	1	**Water Efficiency**		7 Points
	1		Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
	1		Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		1	Credit 2	**Innovative Wastewater Technologies**	1
2	1		Credit 3	**Water Use Reduction**	1 to 3
				Credit 3.1 20% Reduction	1
			-->	Credit 3.2 30% Reduction	2
				Credit 3.3 40% Reduction	3
	1		Credit 4	**Process Water Use Reduction**, 20% Reduction	1

Yes	?	No			
6	6	5	**Energy & Atmosphere**		17 Points
Yes			Prereq 1	**Fundamental Commissioning of the Building Energy Systems**	Required
Yes			Prereq 2	**Minimum Energy Performance**	Required
Yes			Prereq 3	**Fundamental Refrigerant Management**	Required

***Note for EAc1:** All LEED for Schools projects registered after June 26, 2007 are required to achieve at least two (2) points.

6	2	2	Credit 1	**Optimize Energy Performance**	2 to 10
				Credit 1.2 14% New Buildings / 7% Existing Building Renovations	2
				Credit 1.3 17.5% New Buildings / 10.5% Existing Building Renovations	3
				Credit 1.4 21% New Buildings / 14% Existing Building Renovations	4
				Credit 1.5 24.5% New Buildings / 17.5% Existing Building Renovations	5
			-->	Credit 1.6 28% New Buildings / 21% Existing Building Renovations	6
				Credit 1.7 31.5% New Buildings / 24.5% Existing Building Renovations	7
				Credit 1.8 35% New Buildings / 28% Existing Building Renovations	8
				Credit 1.9 38.5% New Buildings / 31.5% Existing Building Renovations	9
				Credit 1.10 42% New Buildings / 35% Existing Building Renovations	10
		3	Credit 2	**On-Site Renewable Energy**	1 to 3
				Credit 2.1 2.5% Renewable Energy	1
				Credit 2.2 7.5% Renewable Energy	2
				Credit 2.3 12.5% Renewable Energy	3
	1		Credit 3	**Enhanced Commissioning**	1
	1		Credit 4	**Enhanced Refrigerant Management**	1
	1		Credit 5	**Measurement & Verification**	1
	1		Credit 6	**Green Power**	1

LEED for Schools 2007
Registered Project Checklist

Yes	?	No		
3	4	6	Materials & Resources	13 Points

Yes					
		1	Prereq 1	**Storage & Collection of Recyclables**	Required
		1	Credit 1.1	**Building Reuse,** Maintain 75% of Existing Walls, Floors & Roof	1
		1	Credit 1.2	**Building Reuse,** Maintain 95% of Existing Walls, Floors & Roof	1
		1	Credit 1.3	**Building Reuse,** Maintain 50% of Interior Non-Structural Elements	1
1			Credit 2.1	**Construction Waste Management**, Divert 50% from Disposal	1
	1		Credit 2.2	**Construction Waste Management**, Divert 75% from Disposal	1
	1		Credit 3.1	**Materials Reuse**, 5%	1
		1	Credit 3.2	**Materials Reuse**, 10%	1
1			Credit 4.1	**Recycled Content**, 10% (post-consumer + 1/2 pre-consumer)	1
	1		Credit 4.2	**Recycled Content**, 20% (post-consumer + 1/2 pre-consumer)	1
		1	Credit 5.1	**Regional Materials**, 10% Extracted, Processed & Manufactured	1
		1	Credit 5.2	**Regional Materials**, 20% Extracted, Processed & Manufactured	1
	1		Credit 6	**Rapidly Renewable Materials**	1
1			Credit 7	**Certified Wood**	1

LEED for Schools 2007
Registered Project Checklist

Yes	?	No			
8	11	1	**Indoor Environmental Quality**		20 Points
Yes			Prereq 1	**Minimum IAQ Performance**	Required
Yes			Prereq 2	**Environmental Tobacco Smoke (ETS) Control**	Required
Yes			Prereq 3	**Minimum Acoustical Performance**	Required
1			Credit 1	**Outdoor Air Delivery Monitoring**	1
	1		Credit 2	**Increased Ventilation**	1
	1		Credit 3.1	**Construction IAQ Management Plan,** During Construction	1
1			Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
2	2		Credit 4	**Low-Emiiting Materials**	1 to 4
1			Credit 5	**Indoor Chemical & Pollutant Source Control**	1
1			Credit 6.1	**Controllability of Systems**, Lighting	1
	1		Credit 6.2	**Controllability of Systems**, Thermal Comfort	1
	1		Credit 7.1	**Thermal Comfort,** Design	1
	1		Credit 7.2	**Thermal Comfort,** Verification	1
1	2		Credit 8.1	**Daylight & Views,** Daylight 75% of Spaces	1 to 3
			-->	75% of classrooms (Required for either points below)	1
				90% of classrooms	2
				75% of other spaces	3
1			Credit 8.2	**Daylight & Views,** Views for 90% of Spaces	1
	1		Credit 9	**Enhanced Acoustical Performance,** 40 dBA / RC level of 32	1
		1		**Enhanced Acoustical Performance,** 35 dBA / RC level of 27	1
	1		Credit 10	**Mold Prevention**	1

Yes	?	No			
4	2		**Innovation & Design Process**		6 Points
1			Credit 1.1	**Innovation in Design:** Provide Specific Title	1
1			Credit 1.2	**Innovation in Design:** Provide Specific Title	1
	1		Credit 1.3	**Innovation in Design:** Provide Specific Title	1
	1		Credit 1.4	**Innovation in Design:** Provide Specific Title	1
1			Credit 2	**LEED® Accredited Professional**	1
1			Credit 3	**School as a Teaching Tool**	1

TAB – 5 Project Schedule

NEW MIDDLE SCHOOL

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New Middle School
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Minot, ND
Proj. No.: 10-3111-159

12/20/2011

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ARCHITECTS PLANNERS
4040 HELENE AVENUE, NAPERVILLE, IL 60564
TEL 630.904.4300 FAX 630.904.1515
www.healybender.com

Preliminary Project Timeline

Description of Activity	2011 Nov	Dec	2012 Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	2013 Jan	Feb	Mar	April	May	June	July	Aug	Sept
Schematic Design																							
Schematic Design Review Workshops / 11-29-11																							
Schematic Design Final Review / 12-20-11																							
Schematic Design Approval / 1-3-12																							
Design Development																							
Design Development / 1-4-12 to 3-5-12																							
Design Development Approval / 3-6-12																							
Construction Documents																							
Construction Documents Bid Pkg 1 / 3-6-12 to 4-9-12																							
Construction Documents Bid Pkg 1 Final Approval / 4-9-12																							
Construction Documents Bid Pkg 2 / 3-6-12 to 6-4-12																							
Construction Documents Bid Pkg 2 30% Approval / 4-2-12																							
Construction Documents Bid Pkg 2 60% Approval / 5-7-12																							
Construction Documents Bid Pkg 2 Final Approval / 6-4-12																							
FEMA Revised Worksheet Submittal / 6-11-12																							
Bidding and Award																							
Construction Documents Bid Pkg 1 / 4-10-12 to 5-7-12																							
Construction Documents Bid Pkg 1 Award / 5-8-12																							
Construction Documents Bid Pkg 2 / 6-5-12 to 7-2-12																							
Construction Documents Bid Pkg 1 Award / 7-3-12																							
Construction Administration																							
Bid Pkg 1 (Site, Concrete, Structural Steel) / 5-9-12 to 12-7-12																							
Bid Pkg 2 (Remaining Trades) / 7-5-12 to 7-1-13																							
Substantial Completion - Staff Occupancy / 7-2-13																							
Punchlist Completion - Student Occupancy / 8-12-13																							

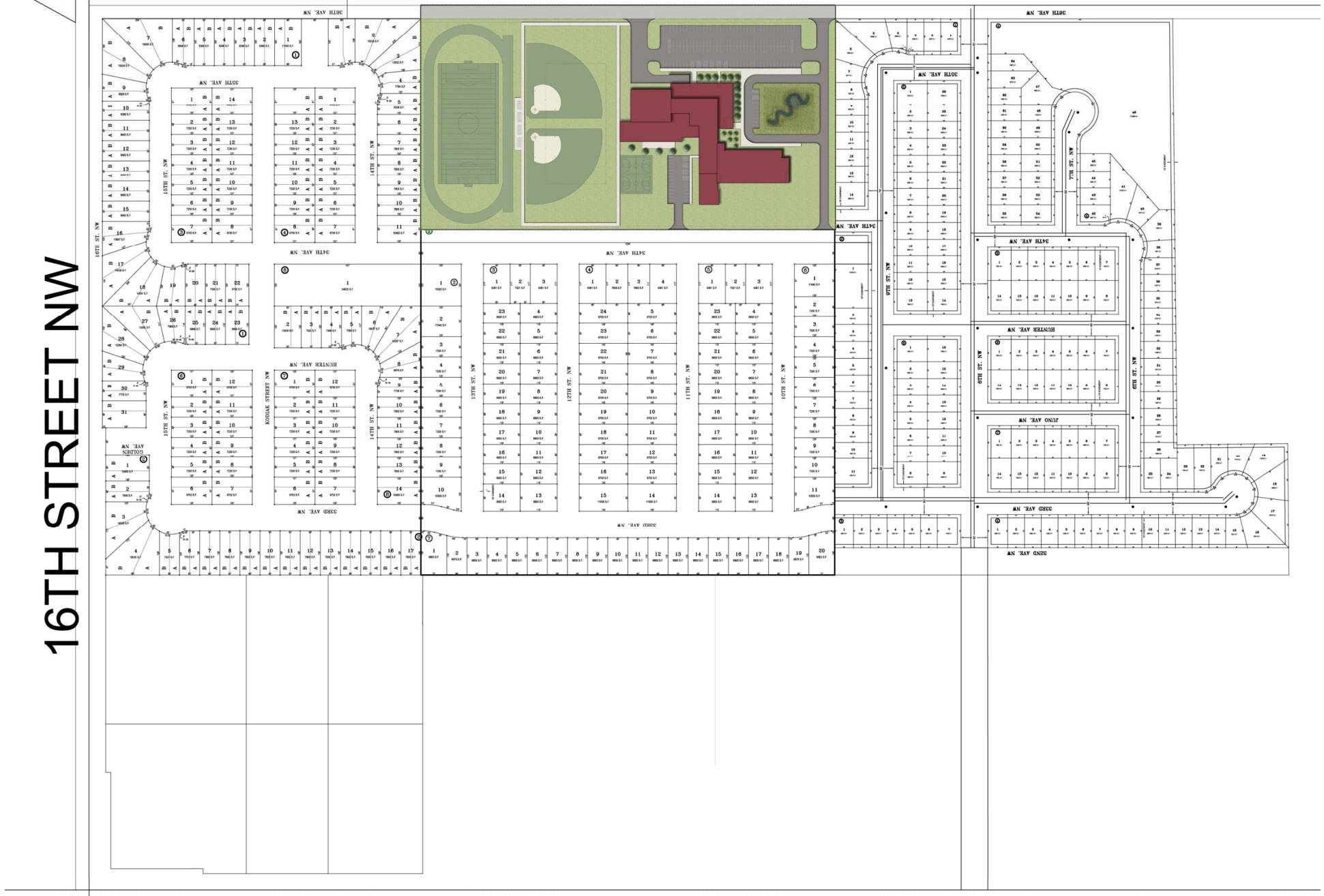
TAB – 6 Architectural Drawings

NEW MIDDLE SCHOOL

Minot, Ward County, North Dakota

HEALY BENDER

HEALY, BENDER & ASSOCIATES, INC.
4040 Helene Avenue, Naperville, Illinois 60564 Telephone 630.904.4300 Facsimile 630.904.1515 www.healybender.com



Preliminary Plat of Polar Bear Ridge – Block 2 of the Northern Lights Addition - Minot, North Dakota

Minot Public Schools

Schematic Design Phase

New Ramstad Middle School

Site Location Map

January 10, 2012

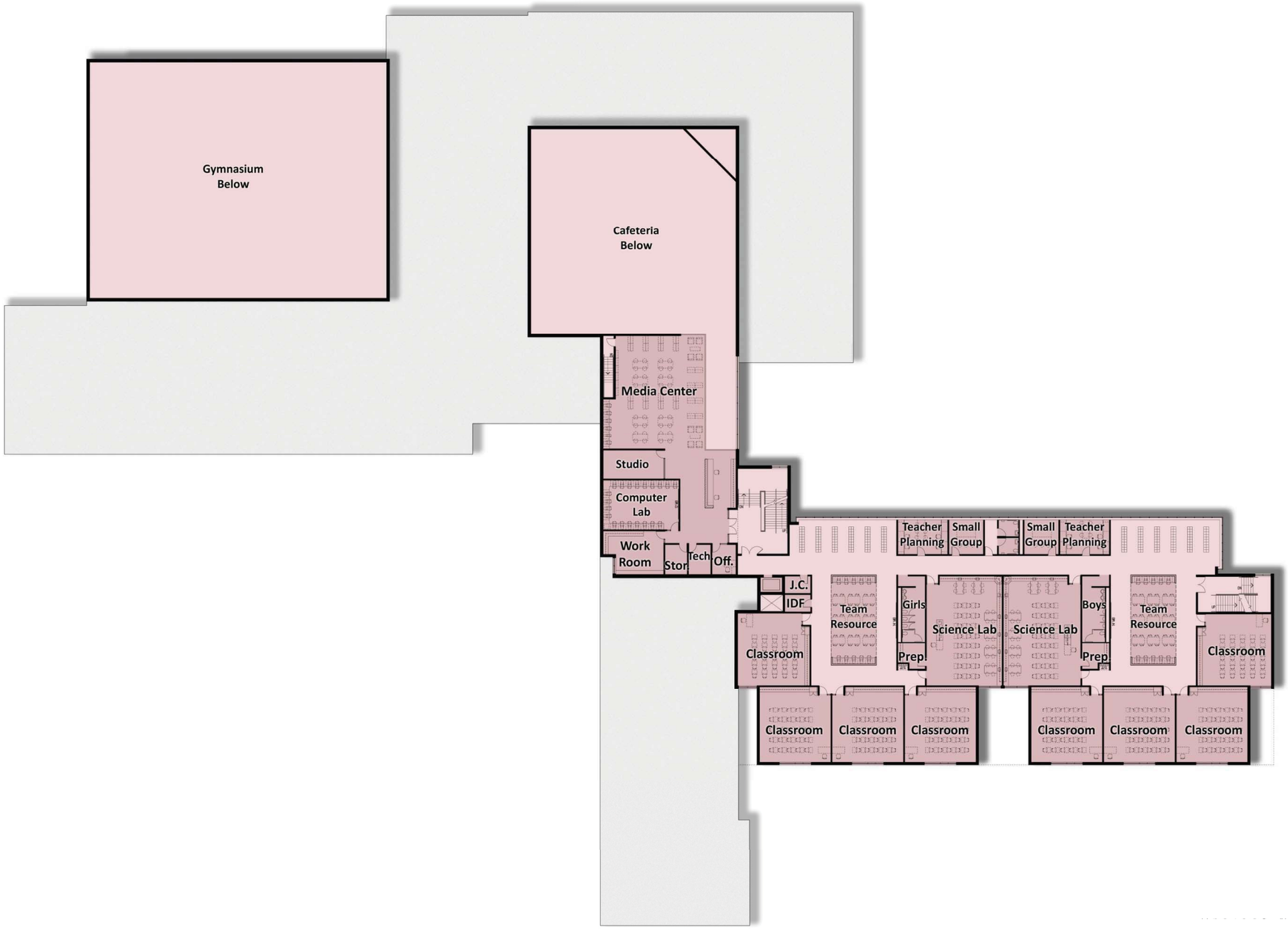
Minot Public Schools

Schematic Design Phase

New Ramstad Middle School

1st Floor Plan (Base)

January 10, 2012



Minot Public Schools

Schematic Design Phase

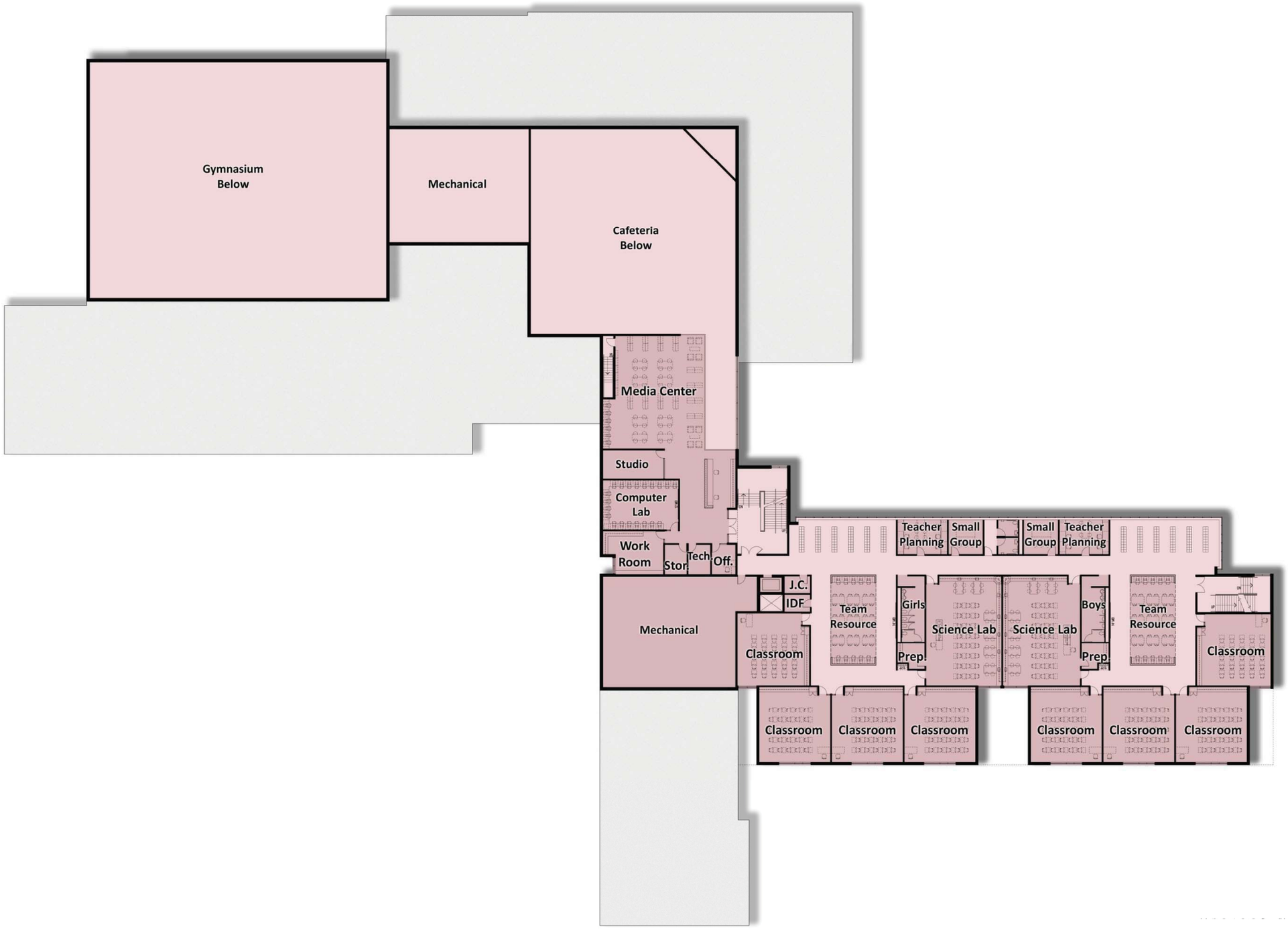
New Ramstad Middle School

2nd Floor Plan (Base)

January 10, 2012

KA

HEALY BENDER



Minot Public Schools

Schematic Design Phase

New Ramstad Middle School

2nd Floor Plan (Add Alternate)

January 10, 2012

KA

HEALY BENDER

Minot Public Schools

Schematic Design Phase

New Ramstad Middle School

3rd Floor Plan (Add Alternate)

January 10, 2012

Minot PUBLIC SCHOOLS

TAB – 7 Building Systems

NEW MIDDLE SCHOOL

Minot, Ward County, North Dakota

HEALY BENDER

HEALY, BENDER & ASSOCIATES, INC.
4040 Helene Avenue, Naperville, Illinois 60564 Telephone 630.904.4300 Facsimile 630.904.1515 www.healybender.com

Kadrmas
Lee &
Jackson
Engineers Surveyors
Planners

December 12, 2011

Ted Rozeboom, AIA, LEED AP
Educational Planner, Lead Designer
Healy, Bender & Associates, Inc.
4040 Helene Avenue
Naperville, IL 60564

Re: Northern Lights Development – Portion of Block 2

Dear Mr. Rozeboom:

The following information is prepared for your use and provided to identify and describe additional details as presented in a November 19, 2011 email to you regarding this property. The following descriptions are based upon preliminary discussions and may change somewhat, depending upon the final outcome of those acquisition discussions with all parties involved.

Street Access: The northern portion of Block 2 of the Northern Lights Master Plan is adjacent to the future 36th Avenue N. This avenue is expected to be developed as a two lane (with a potential third turn lane), paved street with curb and gutter, and sidewalks. This avenue would connect to 16th Street NW on the west (which is to be developed with this development with a similar lane configuration as 36th Avenue NW) and US 83 (North Broadway) on the east.

Additionally, on the south border of this property, an avenue is proposed to be constructed that would provide access directly to the property. On the east, 8th Street NW would connect to each of these avenues and to 30th Ave NW. We do not anticipate parking to be provided for on 36th Avenue NW or on 16th Avenue. Parking on other streets may be subject to final platting decisions by the eventual owner of that property.

Water Supply: Available connection to water supply is planned for 36th Avenue NW and also available on the avenue bordering on the south. The system is estimated to provide sufficient flows for a standards residential sub-division. Specific individual owner requirements are considered their responsibility. Fire hydrants, gate valves and connections will be included in the final construction along 36th Avenue NW and the avenue to the south per the requirements of the City of Minot.

Sanitary Sewer: Access to the sanitary sewer system is planned for the south side of this proposed lot and would be sized to accommodate a standard residential system requirement and is expected to handle normal usage for your proposal. The connection would enter the system being designed to accommodate the adjacent residential development.

701 839 3383
2900 10th St SW, Suite A
PO Box 250
Minot, ND 58702-0250
Fax 701 838 3578
kljeng.com

Storm Sewer: generally, the surface runoff in this area will include some surface drainage and a system of underground storm sewers that will collect and direct these flows to the storm system being completed for the total Northern Lights development. Your specific requirements may be incorporated into the final design. Overall, the systems must meet City of Minot standards.

Site Grading: The site is proposed to be graded with general requirements to provide a general slope to the southeast. All wetlands identified on the properties have been cleared for removal and in this vicinity are proposed to be filled and graded. Individual requirements for site specific grading are the responsibility of the proposed owner.

Electricity, Natural Gas, Telephone, Cable TV: We have been in contact with the utilities companies in Minot and it is projected to have all services available to the boundaries of your site. Specific needs that may be necessary for your facility should be coordinated directly with the utility.

This letter will be distributed as an attachment to an email and not directly mailed. If you require the original, please let me know. Should you have any additional questions, please contact us at your leisure.

Sincerely,

Kadrmas, Lee & Jackson, Inc.

Greg Oase, PE
Senior Engineer

Project #: 7611155
c: by email only, Scott Anderle, AIA

Kadrmas Lee & Jackson
Engineers Surveyors Planners

BUILDING SYSTEMS – STRUCTURAL

NEW MIDDLE SCHOOL

General

The basic structural system being considered is a steel frame skeleton with steel floor and roof joists. The masonry shell and interior walls are non-load bearing, and the columns would be embedded in the masonry walls. The advantage to this is the time savings to get the building under roof, as well as the wall thickness savings on walls over 18' in height such as the multi-story areas. The Gymnasium is proposed to be insulated industrial precast concrete wall panels.

Foundation and Floor Slab

The exterior foundation walls and strip footings to be poured in place concrete extended down below frost depth at a minimum, with reinforced concrete column piers and footings to be integral to the exterior foundation walls. Interior reinforced concrete column piers and footings are planned for the interior columns. The Gymnasium precast concrete wall panels will extend down below grade and bear on a continuous reinforced concrete strip footing. The slab on grade is proposed to be 5" thickness with WWF on vapor barrier on 4" gravel base, unless the final soils report requires other. The floor slab below interior masonry walls would be reinforced and thickened to 12" x 24" width centered on the wall.

Walls

The exterior walls generally to be 1'-3" masonry cavity walls with exterior face brick of two different colors for specific areas of detail. The components of the wall to be 4" face brick, 2½"rigid polyisocyanurate insulation LTTR = 15.0, 1¼" remaining air space, and 8" concrete masonry unit interior back up. Architectural precast concrete sills of various design at punched windows, etc. are provided. The Gymnasium is to be insulated industrial precast concrete wall panels with an exterior skin of ribbed horizontal architectural metal panels installed over the face, with the limited exposed lower exterior area of the precast concrete surfaces stained. There will be detailed entrance areas with smooth faced architectural metal panel system skin over insulated CMU wall back up, as well as areas of cantilevered roof structure with architectural metal panel system soffits. The interior walls are to be 8" concrete masonry units.

New punched opening window units and clerestory windows to be 3¼" depth thermally broken aluminum windows with 1" insulated tinted Low-E glass meeting energy code requirements. Operable units to be awning type with screens. Larger glazed areas such as the multi-story areas to have thermally broken aluminum curtain wall system with 1" insulated tinted Low-E glass meeting energy code requirements. Insulated spandrel glass units shall be set in lieu of insulated glass in areas in need of an opaque condition to hide structure, etc.

Exterior doors and frames to be aluminum with tempered safety glass at building entries, and hollow metal doors and frames at room exits.

Above Grade Floors

The above grade floor structural system in general consists of open web K-series steel joists bearing on the structural steel frame, spaced at 2'-0" on center, spanning from the exterior in to rows of structural frame centered along the corridor walls. Floor deck is 1" Type C metal deck welded to the joists, with 3½" poured concrete slab with WWF.

Roof

The roof system in general consists of open web K-series steel joists bearing on the structural steel frame, spaced at 5'-0" on center, spanning from the exterior in to rows of structural frame centered along the corridor walls. It is intended to slope the structure for roof drainage with the high point along the center. The Gymnasium and Cafeteria/Performing Arts areas would be single span with LH-series steel joists, sloped for roof drainage. Roof deck is 1½" Type B metal deck welded to the joists, except in exposed assembly areas the roof deck to be 2½" acoustical metal deck (NRC 0.95). The selected roofing material type to be installed over 4½" rigid polyisocyanurate insulation LTTR = 27.0, with tapered insulation crickets as required.

New Ramstad Middle School
Building Systems – Mechanical

UTILITY SERVICES: A new 3" domestic water line will be brought in to the building and a new 6" water line will be brought in to support the fire sprinkler system. A new 6" PVC sanitary sewer line will be also required. A new gas line will be brought in to support the kitchen and domestic water heater.

PLUMBING: New waste and vent piping will be PVC. Domestic water piping will be type M copper with 1" insulation. Fixtures will be selected to meet current ADA Standards and have reduced water usage.

ROOF DRAINAGE: New internal rain leaders will convey water from the roof to discharge to the new underground storm drain being connected to the storm sewer piping system if available on site. A secondary roof drainage system will be required in the form of overflow scuppers or redundant roof drain/rain leader system. Attention has to be paid to surface drainage away from the buildings.

FIRE PROTECTION: A fire sprinkler system designed in accordance with NFPA 13 will be required in the new building. The need for a fire pump is not anticipated.

HEATING AND AIR CONDITIONING: A centralized hydronic heat pump system will supply the HVAC system. Heat recovery chillers will extract and reject heat to and from a geothermal well field. The system will be capable of operating with boilers and cooling towers in lieu of a geothermal well field. Heating, ventilation and air conditioning will be delivered to spaces with by variable speed air handlers. Space zoning will be provided by reheat variable air volume (VAV) units. Glycol/water solution will be used for the geothermal freeze protection. A small high efficiency condensing boiler will provide heat for tempering outside ventilation air and for booster heat in vestibules.

VENTILATION: Air to air heat exchanger system featuring rotary heat recovery wheels and DX dehumidification will be utilized to supply fresh air to the building. Supplemental heat will be provided via hot water reheat coils in the unit or supply ductwork as appropriate. The ventilation system will be fully ducted. CO sensors will vary the amount of fresh air delivered to larger spaces with variable occupancies (gymnasium and cafeteria). A flat plate air-to-air heat exchanger will be used for pool humidity and pressure control.

AUTOMATIC TEMPERATURE CONTROLS: Controls will be DDC and will have the capability for a graphical web-based interface. The controls will be connected with the one of the school building automation systems (BAS).

New Ramstad Middle School
Building Systems – Electrical

LIGHTING: High efficiency light fixtures utilizing T5 lamps and electronic ballasts with be used throughout the building. Light fixture types/styles will be similar to those used over the past several years in other MPSD elementary and middles schools that have undergone electrical upgrades. As required by the newly adopted energy codes, an automated control system will control the lights in most areas. Daylight harvesting may be incorporated into some of the clear story spaces.

POWER: The receptacle layouts will ensure the demands of receptacles/power in today's classrooms are met.

SERVICE/DISTRIBUTION: A 277/480Volt electrical service will be installed on the main floor of the building services area. Xcel Energy is the serving utility. A sub distribution section will be installed in the 2nd floor mechanical room. 120/208Volt distribution will be consolidated in these two main areas also, so as to limit the quantity of step down transformers and maximize efficiency. A small natural gas generator will be installed for emergency power.

COMMUNICATIONS: A Category 6 voice/data cabling system will be installed. Dedicated IT rooms will be strategically located. A CATV system incorporating local programming will be installed. Raceways for owner provided smart board and sound field equipment will be included.

FIRE ALARM: An addressable fire alarm system will be installed. Manual pull stations will be included at all exits. Selective smoke detection will be provided in critical areas.

INTERCOM/CLOCK: A dmx type intercom/clock/program system similar to other buildings in the district will be installed.

SECURITY: A surveillance system that monitors all entrances to the building will be installed.

Minot PUBLIC SCHOOLS

TAB – 8 Room Finish Schedule

NEW MIDDLE SCHOOL

Minot, Ward County, North Dakota

HEALY BENDER

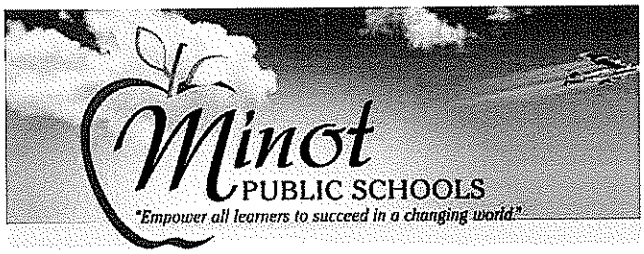
HEALY, BENDER & ASSOCIATES, INC.
4040 Helene Avenue, Naperville, Illinois 60564 Telephone 630.904.4300 Facsimile 630.904.1515 www.healybender.com

ROOM FINISH SCHEDULE - New Middle School

NO.	ROOM NAME	FLOOR							BASE						WALL						WAINSCOT					CEILING						CEIL HGT			REMARKS
		CONCRETE	VCT	CARPET	CERAMIC TILE	WOOD	RUBBER ATHLETIC FLR.	RUBBER TILE	FACE BRICK	CERAMIC TILE	RUBBER	CMU	PRECAST CONCRETE	SGT	PLASTER ON CMU	FACE BRICK	CMU	CERAMIC TILE ON CMU	PRECAST CONCRETE	PAINT	SGT	CERAMIC TILE	EPOXY PAINT	FULL HEIGHT	5'-4" HGT.	10'-0" HGT.	2X2 SUSP. AC.T. (NRC 0.55)	2X2 SUSP. AC.T. (NRC 0.90)	2X2 SUSP. AC.T. (FDA APRV)	SUSP. GYP. BD.	EXPOSED CONST	PAINT	9'-0"	VARIES	14'-0"	Typical Note: Paint HM Doors, HM Frames, & Metal Railings; Stain and Seal Wood Doors & Wood Trim
	Classrooms			O							O						O			O							O						O			
	Team Resource Areas		O								O				O					O							O	O					O			
	Corridors		O								O				O					O			O		O		O						O			3
	Vestibules		O						O							O														O		O	O			
	Multi-User Toilets				O					O																				O		O	O			
	Gymnasium					O					O								O	O			O								O	O		O		
	Gym Storage	O											O						O	O											O	O		O		
	Locker Rooms	O									O	O					O			O			O		O						O	O	O			
	Pool	O			O									O							O			O							O	O		O		
	Showers				O					O								O													O		O			
	Weights / Fitness						O				O						O			O			O		O						O	O		O		
	Single User Toilets				O					O					O					O											O		O			
	Staff Room / Work Room		O								O				O					O							O						O			
	Health		O								O				O					O							O						O			
	Administration Offices			O							O				O					O							O						O			
	Lobby								O							O												O					O			3
	Cafeteria		O					O			O				O					O										O	O	O		O	O	1
	Stage					O					O				O					O										O	O	O		O		1
	Kitchen																O						O	O					O				O			2
	Band			O							O				O					O								O							O	1
	Choral		O								O				O					O								O							O	1
	Stairs							O			O						O			O			O		O		O						O	O		
	Art		O					O			O						O			O											O	O		O		
	Family Consumer Science		O					O			O						O			O							O						O			
	Science Labs / Prep Rooms		O					O			O						O			O							O						O			
	Media Center			O							O				O													O							O	
	Computer Lab		O								O						O			O							O						O			
	Custodial Areas	O										O					O			O											O	O		O		
	Mechanical / Electrical Spaces	O										O					O														O			O		

KEYNOTES:

1. Space to have acoustic ceiling clouds and acoustic wall baffles to provide appropriate absorbtion and/or diffused sound conditions per acoustical consultant.
2. Quarry Tile Floor and Cove Base.
3. Porcelain Tile in Lobby and main entry/events entry Corridors to Gym, Admin., and Cafeteria.



Technology SD Program Report

New Middle School

December 20, 2011

Prepared by:

Tony Chojnowski RCDD/OSP, RTPM

Brad Ehlert, CTS-D

Jeff Coombs, RCDD

Elert & Associates
651-430-2772
www.elert.com

Introduction

The primary purpose of this Technology Program document is to establish the requirements and parameters for the new technology systems to support next-generation teaching and learning for the new Middle School campus.

E&A strongly recommends that all technology and security engineering and installation should be contracted and negotiated directly with the owner. Technology changes and updates at such a rapid pace that doing so will minimize change orders.

Program Scope

The scope of the program includes:

- Identifying base building technology needs for network cabling infrastructure.
- Identifying base building technology needs for premise electronic security.
- Identifying needs for technology to aid teaching and learning.
- Providing options and recommendations for systems to meet identified needs.
- Estimated costs for recommended technology systems.

Cabling Infrastructure

"Cabling Infrastructure" in this section is defined as a combination of all copper and optical fiber telecommunications cables, equipment/patch cables and connecting hardware. The cabling infrastructure recommended for installation will be a combination of UTP copper cable and fiber optic cable.

Horizontal (Station) Cabling

Horizontal cabling is the cabling between the work area telecommunications outlet and the telecommunications room (TR). Horizontal cabling is often referred to as "station cabling".

The typical telecommunication outlet will have two data grade cables. Both of these cables will be terminated on modular patch panels in the telecommunication rooms (TRs).

Teacher's stations will receive two data grade cables.

Additional data outlets will be installed at student stations and in accessible ceiling spaces throughout the building for wireless network access points.

In all, it is estimated that this Campus will require approximately (235) standard dual jack telecommunication outlets, (54) wireless access point outlets and (40) outlets for IP cameras and other peripheral devices.

Intra-Building Backbone Cabling

Backbone Cabling is the cable and hardware interconnecting telecommunication rooms (TRs), building demarcation rooms, equipment rooms and server rooms. The backbone cabling will consist of the following cable types:

- Multi-Pair Voice Cabling: Voice backbone cabling would consist of 25-pair Category 3 cables.
- Fiber Optic Data Cabling: Data backbone cabling would consist of 50 Micron Multi-mode fiber optic cabling. Each TR/IDF will receive a 12-strand Multi-mode cable from the MER/MDF.

Premise Security

"Premise security" in this section is defined as a combination of door access control and CCTV video surveillance systems.

Card Access

Card access system in this section is defined as the entry control system and equipment that allows authorized personnel into designated secure areas. Access control also refers to the process of managing databases or records, and determining levels of authorized entry, such as who will be granted access and when they may enter the designated space.

Doors requiring card readers will be fitted with electronic strikes or electronic panic hardware, request for exit motion sensors and recessed door status switches. It is anticipated that there will be approximately (12) doors requiring access control.

CCTV Surveillance System

It is recommended that the district move to a new localized IP based system. IP Cameras offer a high level of flexibility and manageability.

The benefit of IP networks and video surveillance systems is in its standard method of addressing and connecting to devices. These devices can include cameras, computers, phones, printers, building managements systems just to name a few. In a CCTV application, this means specific cameras can be managed, viewed and controlled from anywhere on the Local Area Network (LAN) by anyone with proper authorization.

The interior color cameras will be in a fixed position and come with a vari-focal lens allowing the camera to be used in a wide angle or telescopic application without purchasing new hardware.